

## Uncancelled Hypnotic Suggestions: The Effects of Hypnotic Depth and Hypnotic Skill on Their Posthypnotic Persistence

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Two experiments were conducted to evaluate the degree to which hypnotic depth and hypnotic skill influence the posthypnotic persistence of an uncancelled suggestion. Each experiment employed 24 subjects (8 high susceptible, 8 medium susceptible, and 8 low susceptible). The induction of hypnosis in Experiment 1 was by videotape; in Experiment 2, an almost identical induction was conducted individually by the experimenter. In both experiments, an arm analgesia item was left uncancelled. Over the two experiments, analgesia persisted posthypnotically for 20% of the highly susceptible subjects. These subjects differed from the highly susceptible subjects not manifesting the phenomenon in having significantly better hypnotic analgesia and greater hypnotic depth. The data suggest that posthypnotic persistence of an uncancelled suggestion is confined to a minority of highly hypnotizable subjects. Persistence appears to have affinities with other low-incidence hypnotic phenomena to which only the top 2-3% of the range of hypnotic susceptibility respond. The majority of highly susceptible subjects either cancel an uncancelled suggestion themselves, or else the suggestion fades with time.

One of the fundamental beliefs about hypnosis is that any hypnotic suggestion administered and tested during hypnosis should be clearly and properly cancelled. It is believed, solely on the basis of anecdote (Jolowicz, 1947; Lindemann, 1973; Weitzenhoffer, 1957; Evans, Note 1), that the failure to cancel a suggestion in hypnosis will lead to a posthypnotic persistence of the suggestion's effects, which in some cases, may be seriously disruptive of the person's subsequent behavior. However, in another anecdote, Bowers (1956, p. 94) indicates that this effect is not invariable; she reports that a subject who realized

she had forgotten to cancel a suggestion proceeded to cancel it himself.

In an initial study, three experiments were reported that were designed to explore the parameters of this phenomenon (Duncan & Perry, 1977). It was found that the incidence of uncancelled suggestions increased substantially among highly hypnotizable subjects (from 8.3% to 41%) when an instruction was inserted into the induction procedure *that the subject would experience all effects suggested for as long as the hypnotist asked him to*. The role of explicit instructions indicating the duration for which the hypnotist expects a suggestion to remain in force has been emphasized elsewhere (Weitzenhoffer, 1957).

Duncan and Perry (1977) found also that the posthypnotic persistence of uncancelled suggestions was confined to highly susceptible subjects (all of whom had been selected on the basis of manifesting posthypnotic amnesia and carrying out a posthypnotic suggestion). Further, their performance was distinguishable from that of a group of insusceptible subjects simulating hypnosis following Orne's (1959) techniques and from a group of medium-susceptible subjects, for whom the uncancelled suggestion did not persist.

The present study was designed to extend the findings of the earlier report. Since it was found that only a percentage of highly susceptible

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subjects manifested the phenomenon, the purpose was to seek differences between those highly susceptible subjects who showed such posthypnotic persistence and those who did not. Specifically, the two groups were compared in terms of (a) hypnotic depth and (b) hypnotic skill, that is, their performance during hypnosis on the item subsequently left uncanceled.

### Method

#### *Subjects*

Forty-eight volunteer undergraduate students (13 male and 35 female) were screened on the Harvard Group Scale of Hypnotic Susceptibility: Form A (HGSHS:A; Shor & Orne, 1962). On the basis of scores obtained in this session, subjects were divided into three groups: highs (range of 10–12), mediums (range of 7–9), and lows (range of 0–2). For both Experiments 1 and 2, they were divided into equal groups ( $n = 8$  for each group) of high-, medium-, and low-susceptible subjects. A further 10 subjects (4 highs, 2 mediums, and 4 lows) were run as pilot subjects prior to the commencement of Experiment 1. The age range was from 17 years to 42 years ( $M = 19$  years).

#### *Procedure*

On arriving at the experimental room, subjects met with a research assistant who explained that the experiment's purpose was to determine whether hypnotic performance could transcend waking performance in certain situations. At this brief introductory period, the insusceptible subjects were given Orne's (1959) simulation instructions as reported by Sheehan (1973). All subjects were then introduced to the experimenter. The hypnotic induction was identical in both experiments, except that the induction was on videotape in Experiment 1, whereas the induction was conducted personally by the experimenter in Experiment 2. The eight-item induction consisted of six items from the Stanford Hypnotic Susceptibility Scale: Form C (Weitzenhoffer & Hilgard, 1962) preceded by the hand levitation item of the Revised Stanford Profile Scales of Hypnotic Susceptibility: Form 1 (Weitzenhoffer & Hilgard, 1967). The order of items was as in Duncan and Perry (1977). Analgesia of the right hand and forearm was inserted into the induction between the mosquito and taste hallucination items; after it had been administered and tested it was left uncanceled. The analgesia was tested in hypnosis by admin-

istering a prod device, powered by an Everready 9-V transistor battery, to the skin behind the knuckle of the third finger. The subjects were required to report the degree of pain experienced in the analgesic and control hands on a 10-point scale, where 1 = painless and 10 = extremely painful. After the experimenter had ascertained the degree of analgesia, a thought-reading item (based on Binet, 1905) was administered to distract subjects from the fact that analgesia had been left uncanceled. The rationale for this item is presented elsewhere (Duncan & Perry, 1977; Perry, Note 2).

*Amnesia inquiry.* During the amnesia inquiry, conducted at the end of the induction session, the experimenter waited until the subject recalled the hand and arm analgesia item, regardless of whether this occurred before or after amnesia was lifted. As soon as the subject had described the feelings of analgesia during the hypnosis session, the experimenter asked how the hand and arm now felt. Regardless of the subject's response, the experimenter always explained that he had inadvertently failed to cancel the analgesia item and removed the analgesia of those subjects for whom it persisted posthypnotically, after having first tested it. Following the amnesia inquiry, the research assistant conducted a postexperimental inquiry following Orne (1959). At this session, the assistant obtained retrospective ratings of the subject's degree of subjective hypnotic depth for each of the items tested during hypnosis.

### Results

As in previous studies, the incidence of uncanceled suggestions persisting posthypnotically was relatively low. Among pilot subjects, it occurred for one highly susceptible subject out of four; in Experiment 1, for two highly susceptible subjects out of eight; and in Experiment 2, for one highly susceptible subject out of eight. By contrast, none of the medium-susceptible subjects manifested posthypnotic analgesia. There were no significant differences between the videotaped and personally conducted hypnotic induction of Experiments 1 and 2 among highly susceptible subjects in terms of their hypnotic analgesia, degree of hypnotic depth during the analgesia item, average hypnotic depth across the session, and HGSHS:A score. Accordingly, the 4 highly susceptible subjects who manifested the phenomenon were compared with the 16 subjects who did not. Data for these subjects are reported elsewhere (Perry, Note 2).

It was found that the subjects for whom analgesia persisted posthypnotically had significantly better analgesia during hypnosis ( $U=9$ ,  $p<.05$ ). They reported significantly greater hypnotic depth both across the total session ( $U=11$ ,  $p<.05$ ) and during the analgesia item itself ( $U=11$ ,  $p<.05$ ). The superiority of these subjects can be seen from a retrospective analysis; all four subjects for whom the uncanceled suggestion persisted posthypnotically rated their analgesia as 2 or less on the 10-point pain scale, and their average depth of hypnosis throughout the session on the 10-point depth scale was 7 or greater. Only 3 of the remaining 16 highly susceptible subjects performed comparably,  $\chi^2(1)=6.64$ ,  $p<.01$ , corrected for continuity.

The postexperimental inquiry was used to ascertain what had happened to the analgesias of the 16 highly susceptible subjects for whom the effect did not persist posthypnotically. Five of these subjects cancelled the suggestion themselves: Three of the five subjects reported doing it during the taste hallucination item, which immediately followed the thought-reading item, whereas the other two subjects began to shake or rub their arm immediately after the hypnotic induction terminated. Six other subjects reported that their arm was still numb following hypnosis, but that the sensation wore off while talking to the experimenter during the amnesia inquiry. One of these latter subjects reported that the analgesia went away while the experimenter was testing the analgesia posthypnotically. Four subjects had no analgesia posthypnotically and had no idea when the numbness had ceased. One final subject lost the analgesia during the thought-reading item when the experimenter tapped his hand three times with a pencil. It can be seen that several of these subjects showed persistences of an unusual kind that were uncued but did not fulfill the criterion of a publicly observable uncanceled suggestion employed by the present investigation.

It was noticeable that the insusceptible subjects in both experiments tended to overact their role as a group. They reported significantly greater analgesia of the hand than the highs and mediums,  $H(2)=6.49$ ,  $p<.05$ , and they role played a greater though nonsignificant difference in sensation between the left and right hands when they were tested for analgesia during hypnosis. Posthypnotically, 11 of the insusceptible subjects reported no difference between the two hands when asked how the analgesic hand felt posthypnotically. A further four subjects reported during the amnesia inquiry that their

right hand still felt numb or like pins and needles. When tested for analgesia posthypnotically, however, they gave identical ratings of pain for both hands; and during the postexperimental inquiry, they maintained that their right hand had actually felt slightly numb posthypnotically. None of these subjects showed any awareness of the experimental hypothesis. The behavior of one subject was genuinely puzzling.<sup>1</sup>

### Discussion

The present study as well as a previous study (Duncan & Perry, 1977) have examined the hitherto unexplored phenomenon of posthypnotic persistence of an uncanceled suggestion under a variety of experimental conditions. The Duncan and Perry (1977) study indicated that the frequency of the persistence of uncanceled suggestions is partially affected by an instruction indicating that the hypnotist implicitly expected suggested effects to continue indefinitely until countermanded by an explicit cancellation. Such an instruction increased the response rate from 8% to 41% in this earlier study; the present study, using the same instruction, found that 20% of the highly susceptible subjects manifested posthypnotic analgesia. While these differences in response rate may represent chance fluctuations in sampling across experiments, it is clear from both studies that uncanceled suggestions continuing beyond hypnosis are relatively rare and confined to a minority of highly susceptible subjects. A response rate of 20–41% of the top 15% of the hypnotizability continuum represents from 3–6% of the total susceptibility distribu-

<sup>1</sup> When analgesia was tested, both during hypnosis and during the analgesia inquiry, this subject rated the right hand as 1 on the 10-point pain scale and the left hand as 4 on each occasion. However, she reported that she had not noticed that the experimenter had not cancelled the analgesia item until she was asked how the right hand felt during the amnesia inquiry. She said that during hypnosis, she had consciously relaxed the right hand during the hypnosis to mitigate the effects of the electric shock and that the reports she gave of pain, both during hypnosis and during the amnesia inquiry, constituted the only unsimulated aspects of her performance. This one subject was the only one to provide analgesia reports during the amnesia that were in any way similar to those provided by highly susceptible subjects for whom the uncanceled suggestion persisted posthypnotically. She did not show any awareness of the experimental hypothesis, and the mechanisms underlying her report are difficult to determine.

tion. In this respect, the phenomenon appears to have affinities with other hypnotic phenomena likewise known to have low incidence.

Other studies have indicated that only a small percentage of highly hypnotizable subjects manifest a hidden observer (Hilgard, Note 3), counter a preconception about hypnosis (Sheehan, 1971), report a double hallucination (Hilgard, 1972; Johnson, Maher, & Barber, 1972; McDonald & Smith, 1975; Orne, 1959; Peters, 1973; Sheehan, Obstoj, & McConkey, 1976), and carry out a posthypnotic suggestion beyond the experimental context (Orne, Sheehan, & Evans, 1968). The evidence of the present and previous study (Duncan & Perry, 1977) indicates that the same is true for posthypnotic persistence of an uncanceled suggestion.

The present study extended the findings of the earlier report in indicating some of the differences between highly susceptible subjects who do and do not manifest posthypnotic persistence of an uncanceled effect. The subjects reporting greater hypnotic depth and superior hypnotic analgesia were the ones to most frequently exhibit analgesia after hypnosis had been formally tested. Although some investigators have questioned the validity of subjective reports, such reports have tended to be lawfully related to changes in stimulus conditions and even physiological measures (Hilgard, 1969). Further, such reports of subjective depth have shown to be closely related to the subject's degree of hypnotic susceptibility (Tart, 1972), with highly susceptible subjects reporting greater depth from a very early point in the hypnotic induction. Although the relation of subjective reports to other hypnotic events remains relatively unexplored, the few studies that exist suggest their potential value. The evidence of subjective report fallibility in respect to some subjects (Barber, 1969) should not be taken as grounds for dismissing them as generally worthless.

The data obtained on both hypotheses investigated bear also on trait and/or skill accounts of hypnotic responsivity. As noted elsewhere (Sheehan & Perry, 1976), trait and state theories of hypnosis have developed in relative mutual isolation. This historical fact leads to certain paradoxes when an attempt is made to reconcile the two approaches. The present study suggests strongly that skill factors may be important in accounting for variations among subjects who otherwise manifest optimal degrees of the state. Alternatively, the fact that subjects for whom an uncanceled suggestion persisted differed from other highly susceptible subjects only in terms of reported depth and degree of

analgesia could mean that these subjects may differ in their degree of subjective involvement. Analgesia may have been especially real, convincing, or involving in some way, leading subjects to rate it as they did. The fact that the subjects showing posthypnotic persistence reported significantly greater depth *throughout* the session is likewise consistent with a hypothesis of greater subjective involvement. Clearly, greater attention needs to be paid to the skill, state, and subjective involvement components of the hypnotic responsivity of highly susceptible subjects.

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